

Applicant : Richard P. Mackey et al.
Serial No. : 09/872,277
Filed : May 31, 2001
Page : 2 of 11

Attorney Docket: 10559-390001 / P10253

Please amend the claims as follows (this listing replaces all prior listings):

1. (Cancelled) A circuit comprising:

a domain-synchronizing controller to produce a source enable signal based on a synchronous pulse signal, the source enable signal enabling capture of data from a source domain; and

a source-enable controller to produce a source inhibit signal based on a relationship between a source domain clock and a destination domain clock, the source inhibit signal controlling the production of the source enable signal by the domain-synchronizing controller.

2. (Currently amended) The circuit in claim [[1]] 4, wherein the source-enable controller produces the source inhibit signal until the data is available at the source register.

3. (Cancelled) The circuit in claim 1, wherein the relationship between the source domain clock and the destination domain clock comprises a ratio between the source domain clock and the destination domain clock.

4. (Currently amended) ~~The circuit of claim 3,~~ A circuit comprising:

a domain-synchronizing controller to produce a source enable signal, the source enable signal enabling capture of data from a source domain; and

a source-enable controller to produce a source inhibit signal based on a ratio between a source domain clock and a destination domain clock, the source inhibit signal controlling the production of the source enable signal by the domain-synchronizing controller;

wherein the source enable controller comprises:

an event detector to monitor a source event signal and the source enable signal;

and

a counter to count the ratio between the source domain clock and the destination domain clock.

Applicant : Richard P. Mackey et al.
Serial No. : 09/872,277
Filed : May 31, 2001
Page : 3 of 11

Attorney Docket: 10559-390001 / P10253

5. (Currently amended) ~~The circuit in claim 3,~~

A circuit comprising:

a domain-synchronizing controller to produce a source enable signal, the source enable signal enabling capture of data from a source domain; and

a source-enable controller to produce a source inhibit signal based on a relationship between a source domain clock and a destination domain clock, the source inhibit signal controlling the production of the source enable signal by the domain-synchronizing controller, wherein the source enable controller produces a source input select signal to control the selection of the data from a plurality of source registers.

6. (Currently amended) ~~The circuit in claim 1, further comprising~~

A circuit comprising:

a domain-synchronizing controller to produce a source enable signal, the source enable signal enabling capture of data from a source domain;

a source-enable controller to produce a source inhibit signal based on a relationship between a source domain clock and a destination domain clock, the source inhibit signal controlling the production of the source enable signal by the domain-synchronizing controller;
and

a destination enable controller to produce a destination inhibit signal, the destination inhibit signal preventing the domain-synchronizing controller from producing a destination enable signal, the destination enable signal enabling a destination register to capture the data at a destination domain.

7. (Currently amended) ~~The circuit in claim 1,~~

A circuit comprising:

a domain-synchronizing controller to produce a source enable signal based on a synchronous pulse signal, the source enable signal enabling capture of data from a source domain, wherein the domain-synchronizing controller comprises: comprising

Applicant : Richard P. Mackey et al.
Serial No. : 09/872,277
Filed : May 31, 2001
Page : 4 of 11

Attorney Docket: 10559-390001 / P10253

a plurality of flip-flops connected in a loop, the plurality of flip-flops including a first flip-flop operating according to ~~the~~ a source domain clock and a second flip-flop operating according to ~~the~~ a destination domain clock; and

a first logic component positioned between two of the plurality of flip-flops, the first logic component inverting the output of a prior flip-flop before reaching the input of a next flip-flop to produce the synchronous-pulse signal; and

a source-enable controller to produce a source inhibit signal based on a relationship between the source domain clock and the destination domain clock, the source inhibit signal controlling the production of the source enable signal by the domain-synchronizing controller.

8. (Original) The circuit in claim 7, wherein the source inhibit signal controls a second logic component to prevent the domain-synchronizing controller from propagating the synchronous pulse signal.

9. (Previously presented) The circuit in claim 8, wherein the second logic component comprises a multiplexor.

10. (Original) The circuit in claim 8, further comprising a third logic component positioned between an input and an output for the first flip-flop, the second logic component producing the source enable signal.

11. (Original) The circuit in claim 10, further comprising a fourth logic component positioned between an input and an output for the second flip-flop, the fourth logic component producing a destination enable signal.

12. (Previously presented) The circuit in claim 10, wherein the third logic component comprises an XOR gate.

Applicant : Richard P. Mackey et al.
Serial No. : 09/872,277
Filed : May 31, 2001
Page : 5 of 11

Attorney Docket: 10559-390001 / P10253

13. (Original) A circuit comprising:
a plurality of flip-flops connected in a loop, the plurality of flip-flops including a first flip-flop operating on a source domain clock and a second flip-flop operating on a destination domain clock;
a first logic component positioned within the loop, the first logic component inverting the output of one of the flip-flop to produce a synchronous-pulse signal which propagates through the plurality of flip-flops; and
a second logic component receiving an inhibit signal, the second logic component preventing the propagation of the synchronous-pulse signal based on the inhibit signal.
14. (Original) The circuit in claim 13, wherein the first logic component is an inverter and the second logic component is a multiplexor.
15. (Original) The circuit in claim 13, further comprising a third logic component positioned between an input and an output to the first flip-flop, the first logic component producing a source enable signal.
16. (Previously presented) The circuit in claim 15, wherein the third logic component comprises an XOR gate.
17. (Original) The circuit in claim 13, further comprising a third logic component positioned between an input and an output for the second flip-flop, the third logic component producing a destination enable signal based on the input and the output to the second flip-flop.
18. (Cancelled) A method comprising:
producing a source-enable signal based on a synchronous-pulse signal, the source-enable signal enabling capture of data from a source domain; and

Applicant : Richard P. Mackey et al.
Serial No. : 09/872,277
Filed : May 31, 2001
Page : 6 of 11

Attorney Docket: 10559-390001 / P10253

controlling the source-enable signal with a source-inhibit signal that is produced based on a relationship between a source domain clock and a destination domain clock, the source inhibit signal preventing production of the source-enable signal until the data is available for transmission.

19. (Currently amended) The method in claim ~~[[18]]~~ 22 in which the relationship between the source domain clock and the destination domain clock comprises a ratio between the source domain clock and the destination domain clock.

20. (Currently amended) The method in claim ~~[[18]]~~ 22, further comprising producing the source-inhibit signal until the data is available at the source register or based on the relationship between the source domain clock and the destination domain clock, whichever produces the source inhibit signal for a longer duration.

21. (Currently amended) The method of claim ~~[[18]]~~ 22, further comprising:
producing a source-input select signal which controls the selection of the data from a plurality of destination registers.

22. (Previously presented) ~~The method in claim 18,~~
A method comprising:
producing a source-enable signal based on a synchronous-pulse signal, the source-enable signal enabling capture of data from a source domain, wherein producing the source-enable signal comprises:

operating a plurality of flip-flops in a loop, the plurality of flip-flops including a first flip-flop operating according to ~~the~~ a source domain clock and a second flip-flop operating according to ~~the~~ a destination domain clock;

inverting an output of a prior flip-flop before reaching an input of a next flip-flop to produce the synchronous-pulse signal; and

Applicant : Richard P. Mackey et al.
Serial No. : 09/872.277
Filed : May 31, 2001
Page : 7 of 11

Attorney Docket: 10559-390001 / P10253

preventing a propagation of the synchronous-pulse signal through the plurality of flip-flops based on the source inhibit signal; and
controlling the source-enable signal with a source-inhibit signal that is produced based on a relationship between the source domain clock and the destination domain clock, the source inhibit signal preventing production of the source-enable signal until the data is available for transmission.

23. (Original) The method in claim 22, further comprising originating the synchronous pulse signal before the first flip-flop or the second flip-flop based on a selection signal.

24. (Previously presented) A circuit, comprising:
a first logic component that receives a source enable signal and a source inhibit signal;
a flip-flop that samples an output of the first logic component based on an inverted signal of a domain clock; and
a second logic component that receives an output of the flip-flop and the domain clock, the second logic component producing a gated clock pulse to drive a domain register.

25. (Original) The circuit in claim 24, wherein the first and second logic components are AND-gates and further comprising:
an inverter which inverts the source inhibit signal prior to being received by the first logic component.

26. (Previously presented) An apparatus comprising:
a domain synchronizing controller to produce a source enable signal based on a synchronous pulse signal, the source enable signal enabling capture of data from a source domain;

Applicant : Richard P. Mackey et al.
Serial No. : 09/872,277
Filed : May 31, 2001
Page : 8 of 11

Attorney Docket: 10559-390001 / P10253

a source enable controller to produce a source inhibit signal that controls production of the source enable signal by the synchronizing controller; and

a destination enable controller to produce a destination inhibit signal that prevents the domain synchronizing controller from producing a destination enable signal that enables capture of the data at a destination domain.

27. (Previously presented) An apparatus comprising:

a domain synchronizing controller to produce a source enable signal based on a synchronous pulse signal, the source enable signal enabling capture of data from a source domain; and

a source enable controller to produce a source inhibit signal that controls production of the source enable signal by the synchronizing controller;

wherein the domain synchronizing controller comprises

flip-flops connected in a loop, the flip-flops including a first flip-flop operating at a source clock frequency and a second flip-flop operating at a destination clock frequency; and

a first logic component positioned between two of the flip-flops, the first logic component inverting the output of a prior flip-flop before reaching the input of a next flip-flop to produce the synchronous pulse signal.

28. (Previously presented) A method comprising:

producing a source-enable signal based on a synchronous-pulse signal, the source-enable signal enabling capture of data from a source domain;

producing a source-inhibit signal until the data is available at the source register or based on a relationship between a source domain clock and a destination domain clock, whichever produces the source inhibit signal for a longer duration; and

controlling the source-enable signal with the source-inhibit signal to prevent the production of the source-enable signal until the data is available for transmission.

29. (Previously presented) A method comprising:

Applicant : Richard P. Mackey et al.
Serial No. : 09/872,277
Filed : May 31, 2001
Page : 9 of 11

Attorney Docket: 10559-390001 / P10253

producing a source-enable signal based on a synchronous-pulse signal, the source-enable signal enabling a source register to capture of data from a source domain;

controlling the source-enable signal with a source-inhibit signal, the source inhibit signal preventing the synchronous-pulse signal from producing production of the source-enable signal until the data is available for transmission;

monitoring a source-event signal; and

producing a source-input select signal that controls the selection of the data from destination registers.

30. (Previously presented) A method comprising:

producing a source-enable signal based on a synchronous-pulse signal, the source-enable signal enabling a source register to capture of data from a source domain; and

controlling the source-enable signal with a source-inhibit signal, the source inhibit signal preventing the synchronous-pulse signal from producing production of the source-enable signal until the data is available for transmission;

wherein producing the source-enable signal comprises

operating flip-flops in a loop, the flip-flops including a first flip-flop operating according to the source domain clock and a second flip-flop operating according to the destination domain clock,

inverting an output of a prior flip-flop before reaching an input of a next flip-flop to produce the synchronous-pulse signal, and

preventing a propagation of the synchronous-pulse signal through the flip-flops based on the source inhibit signal.